

## TECHNONET

### Making self-reliance more than a slogan

Leon V. Chico

A major concern of many developing countries in Asia faced with problems of unemployment and income disparities between urban and rural areas is the promotion and development of small industries in the countryside. But as small industries flourish, many problems surface that are traceable to technical or technological aspects.

The kind of problem encountered in small-scale industries in many countries in Asia does not yield to "book" solutions — solutions that have often been inspired by experiences and successes in more developed economies. Small industries often fail because of excessive costs, particularly as a result of wastage or improper use of raw materials, or because their products are of low quality brought about by poor methods of production. To overcome these problems industry needs technological advice. Quite often, the advice needed is very basic — it is not a question of providing advanced technology, but of having an experienced engineer or technician look at a plant and then make suggestions to improve the processes or the products. Unfortunately, many of these small industries cannot afford to pay for such services in their earlier stages of development.

These services — called industrial extension — vary widely from one country to another. There is, however, recognition of the need to provide technological advice on equipment, methods, processes, production techniques and quality control; coupled with a determination to have the personnel and resources to provide this advice

to production managers on the factory floor.

Because of wide differences in language, cultural background, types of industry and levels of industrial development, it is clear that the industrial extension services must be staffed by indigenous engineers or technicians, and be complementary to the fields of management, marketing and financing which are equally important. These should be organized nationally or perhaps even by provinces and cities. No service organized for the region as a whole could be expected to provide satisfactory service to the individual factories. But a regional service could provide resources on which the various national extension services could draw; the regional service could also provide a focus that would facilitate cooperation and exchanges between the national extension services and their linking into a functional network.

This was the premise upon which a major project in Asia was conceived. In 1973 the IDRC agreed to support a project named TECHNONET ASIA. It brought together eight organizations in six Asian countries into a network for industrial technology information and extension services, and has since expanded to include eleven organizations in nine countries.

The participating organizations had two common features: they were all involved in rendering assistance to small and medium industries in their respective countries; and they were all concerned with the technical and technological aspects of industrialization.

The countries involved are: Bangladesh, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Sri Lanka, Thailand.

In brief, TECHNONET is a cooperative grouping which aims at improving the quality and efficiency of production in small and medium industries through the transfer of technological information and the development of industrial extension services. The project has been looked upon as an "experiment in cooperation".

The TECHNONET concept is not new. It has frequently been discussed before. Proposals have been made for technology data banks, new systems for the international referral of technological enquiries, reforms to the international patent system and, inevitably, new institutes where well-endowed researchers can develop theories about how it can all be made to happen.

Yet, while no one denies that the industrialized countries and the international agencies could be more effective in stimulating the diffusion of technology, at the same time there is a growing realization that the greater part of man's technological know-how is already freely available — and the biggest problem is that the developing countries are ill-equipped to find, evaluate and apply it. By strengthening the



Photo: Neill McKee

Thailand: cottage industries like cloth weaving can benefit from the services TECHNONET offers.



capabilities of its participating organizations, TECHNINET aims to facilitate the transfer of technology and its assimilation by small-scale industries.

What is really new — and can be of enormous benefit to other developing regions in the world — is the proof that a system of networking can be workable. Developing countries have much to share with each other, and the developed countries through their technical assistance programs can strengthen this capability. In fact, TECHNINET draws upon the technological resources of various cooperating organizations in developed countries for some of its activities.

In Phase One, from 1973 to 1976, the TECHNINET project produced results that are attracting considerable attention. It now has a strong network of organizations which make available to one another industrial technical information on products and processes in their own countries that are readily obtainable. Empirical evidence — as reported in "cases" that are being compiled — indicates that technical information obtained from countries with similar stages of development is by far more useful and relevant than that imported from highly developed countries.

Participating organizations also make available to each other their technical personnel for short-term assignments. A monthly TECHNINET "Digest" has kept participating organizations informed of the latest technological developments in member countries.

In 1975 the Asian Industrial Extension Officers' Forum (ASINDEX) was created to give added impetus to this emerging profession. Formal training programs, seminars, workshops, and exchange visits have been arranged. The quarterly TECHNINET "Newsletter" facilitates communication among extension and information officers.

Governments now increasingly accept the need for this type of service and allocate resources for its further development. In the process, networking on a national level has also been encouraged and developed.

State-of-the-art reviews have been undertaken to pinpoint problem areas and the assistance needs of specific industry groups. A list of experts and of sources of information in the participating countries has been drawn up identifying the needs and strengths of each member. The identification of "centres of excellence" in specific fields has been encouraged in order to minimize wasteful duplication of effort.

For example, the establishment of a Plastics Technology Information Unit within the Hong Kong Productivity Centre and the upgrading of the foundry workshop at the Industrial Development Board of Sri Lanka have been supported with the understanding that their expertise and facilities will be available to all the other participating organizations. The Institute for Small-Scale Industries of

the University of the Philippines has made available to participating institutions its modern low-cost automation laboratories as well as its excellent training facilities. The Singapore Institute of Standards and Industrial Research has made available to all participating organizations its excellent Current Awareness Service. The IDRC has also supported in part the establishment of the Asian Packaging Information Centre in Hong Kong and the International Ferrocement Information Center in Bangkok.

The TECHNINET project is now well into its second phase and is stressing the development of self-reliance to ensure that it will be able to continue in the future when external funding is tapered off or ceases. This objective has the strong endorsement of the participating organizations who are taking the necessary steps in that direction.

The "experiment" is by no means completed. The approaches and specific activities undertaken continue to be critically evaluated and improved upon. But this early, some lessons may be learned that could be of immense value to international agencies involved in development assistance and funding:

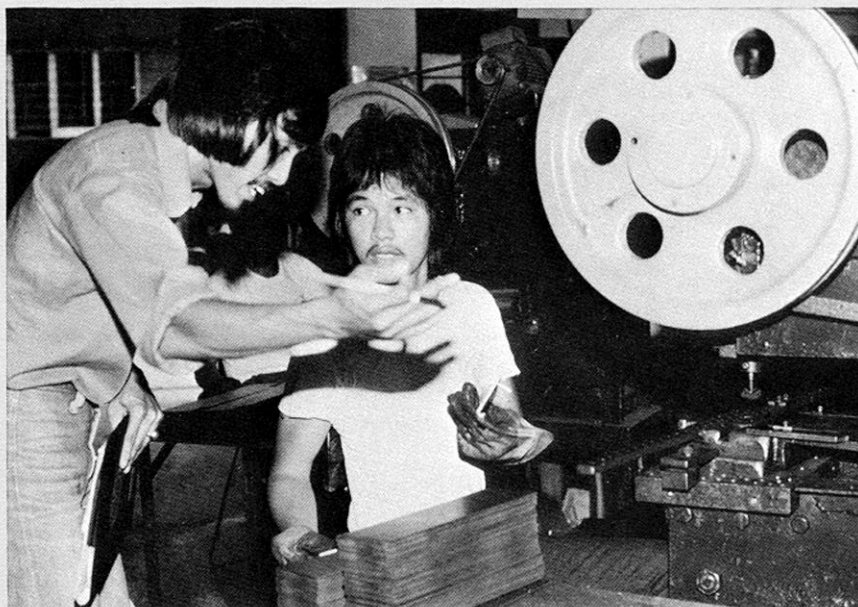
- by effectively deploying a proportion of its own technological manpower for advisory work, a developing country can be, technologically, much more self-reliant than has hitherto been imagined; what are most needed are not fancy new systems, but an indigenous capacity to apply well-

known and readily available technology to overcome actual problems as they are encountered on the factory floor;

- the effective transfer of technological information can be achieved only if properly "processed" — in this case, by the industrial extension officer, who acts as the link between the entrepreneur (who is often not capable of recognizing his problems and identifying his needs), and the sources of information, which can provide more relevant information when the request is more specific;
- developing countries have much to share with each other in terms of technological information, processes and expertise. What is needed is the stimulus to spur this cooperation and interchange and even bring to surface this capability — a role which can be properly undertaken by the international assistance agencies;
- the so-called "transfer of technology" is not a one-way street from developed to developing countries.

As mentioned before, much of the experience gained from the "experiment" had previously been mere theory. However, TECHNINET ASIA is now in the process of demonstrating that such concepts as *self-reliance* and *cooperation* are not mere slogans — they can be made to work. □

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*Malaysia: industrial extension workers can provide practical advice and assistance right on the factory floor.*